A number of historical estimates of the age of the universe are included in the data set `age.universe` in John Varzani’s R package `UsingR`. The following code is adapted from the remarks on that data set in the description of the package.

```r
library(UsingR)
data(age.universe)
n <- nrow(age.universe)
x <- 1:n
plot(x, age.universe$upper, ylim=c(0,20),
     pch=19, col="darkred",
     xlab="Year", xaxt="n", ylab="Age (Ga)",
     main="Historical Estimates of the Age of the Universe")
axis(1, at=x, labels=age.universe$year, las=2)
points(x, age.universe$lower, 
       col="darkred", pch=19)
segments(x0=x, y0=age.universe$lower, 
          x1=x, y1=age.universe$upper, col="orange")
```

The data set also indicates the provenance of these estimates.
Recent estimates of the age of the universe reported by Wikipedia are much more tightly clustered:

13.819, 13.813±0.058, 13.784, 13.796±0.058, 13.8242, 13.817±0.048, 13.817, 13.813±0.047, 13.7914, 13.794±0.044, 13.7965, 13.798±0.037.

Some of these are point estimates, consisting of a single number, and some are interval estimates, made up of a single point estimate, $t$, and a margin of error $ME$. The interval $[t - ME, t + ME]$ is meant to contain the actual age of the universe, with a given probability.

```r
me <- c(0, 0.058, 0, 0.058, 0, 0.048, 0, 0.047, 0, 0.044,0, 0.037)
age <- data.frame(Ga, me)
age
```

### Age

## Ga me
## 1 13.8190 0.000
## 2 13.8130 0.058
## 3 13.7840 0.000
## 4 13.7960 0.058
## 5 13.8242 0.000
## 6 13.8170 0.048
## 7 13.8170 0.000
## 8 13.8130 0.047
## 9 13.7914 0.000
## 10 13.7940 0.044
## 11 13.7965 0.000
## 12 13.7980 0.037

Plot that data.
n <- 12
xs <- 1:n

plot(x=xs, y=age$Ga,
    pch=19, col="darkred", ylim=c(13.72, 13.88),
    xlab="Estimate", ylab="Age (Ga)",
    main="Estimated Age of the Universe (Wikipedia)"
segments(x0=xs, y0=Ga-me, x1=xs, y1=Ga+me, col="orange")

best estimate

The current best estimate for the age of the universe is 13.798 Ga, with a margin of error of 0.037 Ga.

best.estimate <- 13.798
best.estimate.me <- 0.037

Adding this data to the plot relates the modern estimates to our current best estimate.

plot(x=1:n, y=age$Ga,
    pch=19, col="darkred", ylim=c(13.72, 13.88),
    xlab="Estimate", ylab="Age (Ga)",
    main="Estimated Age of the Universe (Wikipedia)"
abline(h = best.estimate, lwd=2, lty="dashed", col="darkseagreen")
abline(h = best.estimate + best.estimate.me * c(-1, 1), lty="dashed", col="darkseagreen3")
segments(x0=xs, y0=Ga-me, x1=xs, y1=Ga+me, col="orange")
Estimated Age of the Universe (Wikipedia)